B1000

Attachment H

COVER SHEET (PAGE 1 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Proposal Title: Anadromous Fish Passage at Clough Dam on Mill Creek

Applicant Name: California Department of Water Resources - William Mendenhall

Mailing Address: 2440 Main Street, Red Bluff, CA 96080

Telephone: (530) 529-7380

Fax: (530) 529-7322

Amount of funding requested: $ 1,280,000 for 2 years

Indicate the Topic for which you are applying (check only one box). Note that this is an important decision: see page __ of the Proposal Solicitation Package for more information.

- ☐ Fish Passage Assessment
- ☒ Fish Passage Improvements
- ☐ Floodplain and Habitat Restoration
- ☐ Gravel Restoration
- ☐ Fish Harvest
- ☐ Species Life History Studies
- ☐ Watershed Planning/Implementation
- ☐ Education
- ☐ Fish Screen Evaluations - Alternatives and Biological Priorities

Indicate the geographic area of your proposal (check only one box):

- ☐ Sacramento River Mainstem
- ☒ Sacramento Tributary: Mill Creek
- ☐ Delta
- ☐ East Side Delta Tributary: _____
- ☐ Suisun Marsh and Bay
- ☐ San Joaquin Tributary: _____
- ☐ San Joaquin River Mainstem
- ☐ Other: _____
- ☐ Landscape (entire Bay-Delta watershed)
- ☐ North Bay: _____

Indicate the primary species which the proposal addresses (check no more than two boxes):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- ☐ Winter-run chinook salmon
- ☒ Spring-run chinook salmon
- ☐ Late-fall run chinook salmon
- ☐ Fall-run chinook salmon
- ☐ Delta smelt
- ☐ Longfin smelt
- ☐ Splittail
- ☒ Steelhead trout
- ☐ Green sturgeon
- ☐ Striped bass
- ☐ Migratory birds

COVER SHEET (PAGE 2 of 2)

May 1998 CALFED ECOSYSTEM RESTORATION PROPOSAL SOLICITATION

Indicate the type of applicant (check only one box):

☒	State agency	☐	Federal agency
☐	Public/Non-profit joint venture	☐	Non-profit
☐	Local government/district	☐	Private party
☐	University	☐	Other: _____

Indicate the type of project (check only one box):

☐	Planning	☒	Implementation
☐	Monitoring	☐	Education
☐	Research		

By signing below, the applicant declares the following:

(1) the truthfulness of all representations in their proposal;

(2) the individual signing the form is entitled to submit the application on behalf of the applicant (if applicant is an entity or organization); and

(3) the person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section II.K) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

_____

(Signature of Applicant)

EXECUTIVE SUMMARY

TITLE OF PROJECT

Anadromous Fish Passage at Clough Dam on Mill Creek.

APPLICANT NAME

California Department of Water Resources
William D. Mendenhall, Senior Engineer

PROJECT DESCRIPTION AND OBJECTIVE

This project is for final design and construction of fish passage facilities at or near to Clough Dam on Mill Creek near Los Molinos. The California Department of Water Resources (DWR) proposes to improve upstream fish passage for adult salmon and steelhead, and provide fish screening facilities for downstream juvenile passage. DWR will work cooperatively with California Department of Fish and Game (DFG), United States Fish and Wildlife Service (FWS), local property owners, diversion owners, and diverters, to provide designs for a new off-stream fish screen and water diversion inverted siphon which when completed will provide reliable fish passage with minimal operation and maintenance.

The objective of this proposal is to provide final designs, including plans and specifications, contract construction, award bid, oversee construction, and pay out to contractor. The goal of the project is to complete the screen in 1998-99 winter months and the siphon by winter 1999-00

APPROACH/TASKS/SCHEDULE

Working directly with DFG and the stakeholders, DWR will develop final designs for the fish screen, inverted siphon, and dam and ladder removal. Plans and specifications for the siphon and dam removal with be prepared for the bidding process. DWR will bid out the construction, award the bid, oversee construction, and pay contractor(s) for the siphon and dam removal. DWR will assist DFG in the construction of the screen facility. DFG has already secured $30,000 from Cal-Fed funding sources for the hardware for the new screen. DFG will be requesting an additional $50,000 for concrete screen structure construction.

DWR will prepare and obtain permits, with DFG's assistance, necessary to do all phases of the siphon and dam removal work, including CEQA and NEPA. DFG will be responsible for permits and environmental compliance for the screen construction. Collection of field data will be completed by 10/1/98. The design for screen will be

completed by 11/1/98. DFG and DWR will construct screen during the 1998-99 winter months. DWR will complete plans and specifications for the siphon by March 1999, and construct the siphon and remove the dam during late summer-fall 1999. This schedule assumes that funding is made available in a timely manner, by October 1998, the permits can be obtained by bidding time and that the weather does not cause delays.

JUSTIFICATION

Enhancing passage for adult and juvenile salmonids on Mill Creek improves the success of both upstream and downstream migration. This will benefit two of the priority species, spring-run Chinook salmon and Steelhead.

BUDGET/THIRD PARTY IMPACTS

The budget cost for this proposal is $ 1,280,000. No negative third party impacts are foreseen from the scope of this proposal. It will be implemented with the cooperation of both the north side diverters, Los Molinos Mutual Water Company (LMMWC), and the south diverters, Clough diversion, and the collaboration of the other resource agencies.

APPLICANT QUALIFICATIONS

The Northern District of DWR has a long history of providing engineering support to fishery restoration programs. DWR staff has extensive experience in performing the tasks outlined in this proposal, as well as, a history of cooperation with the other resource agencies. The project manager for this project is Mr. William Mendenhall. He has over 20 years of experience with fishery restoration planning and design. Additionally, DWR has in house, the equipment, technology, and resources to support this proposal.

MONITORING AND DATA EVALUATION

After completion of this project DFG will be responsible for monitoring the performance of the project components. DFG will assume the responsibility of operating and maintaining the fish screen. The LMMWC will assume the responsibility of operating and maintaining the siphon system.

LOCAL SUPPORT/COORDINATION

The list of collaborators and supporters of this proposal include DFG, FWS, landowners, diverters, and LMMWC. Initial meetings with various groups involved and funding supporters have brought favorable comments.

ANADROMOUS FISH PASSAGE AT CLOUGH DAM
ON
MILL CREEK

ENGINEERING DESIGN AND CONSTRUCTION

California Department of Water Resources, Northern District
William Mendenhall, Chief, Engineering Studies Section
2440 Main St., Red Bluff, CA 96080

Telephone: (530) 529-7380
FAX: (530) 529-7322
E-mail: billm@water.ca.gov

Type of Organization: State Government (Tax Exempt)
Federal Tax I.D. 52-1692634

Implementation Participants and Collaborators:
California Department of Fish and Game
US Fish and Wildlife Service
Tehama County Resource Conservation District

June 30, 1998

PROJECT DESCRIPTION

PROJECT DESCRIPTION AND APPROACH

This project is for final design and construction of an off-stream fish screen LMMWC diversion ditch (right bank, north side of Mill Creek), a cross creek water diversion siphon near the Clough Dam diversion location, and removal of the remaining portion of the Clough Dam, to enhance fish passage on Mill Creek near Los Molinos. DWR proposes to do final designs for both the screen and siphon, assist DFG in construction of the screen, prepare plans and specifications, bid out the construction, award bid contract, provide construction oversight, and pay contractor(s) to construct the siphon and remove dam. The screen will enhance adult salmon and steelhead upstream passage during low flow conditions and keep downstream migrating juveniles screened from the LMMWC diversion ditch. The siphon will replace the need for the Clough diversion dam on the south side of the creek therefore providing unimpaired upstream and downstream fish migration. DWR will work cooperatively with a stakeholders group consisting of DFG, FWS, LMMWC, landowners, diverters and others, to provide designs of the various parts of this proposal that can be mutually beneficial to the resources and agreeable to the stakeholders.

The objective of this project is to provide unimpaired upstream adult passage to prime salmonid habitat and minimize delay to downstream juvenile fish passage on the way to the Sacramento River. The goal of the project is to construct a new single fish screen in LMMWC diversion ditch, construct a water diversion siphon from LMMWC right bank ditch to the existing left bank Clough diversion ditch, and remove the remaining portion of the existing Clough diversion dam and fish ladder.

PROPOSED SCOPE OF WORK

The following is a summary of tasks and product descriptions presented in their approximate order of implementation.

Task-1

Design fish screen facility in LMMWC diversion ditch. Prepare working drawings to be used by DFG screen shop staff and DWR staff to construct concrete screen structure. Also includes any minor diversion ditch capacity modification designs to make sure the diversion ditch has a 110 cfs capacity up to the proposed siphon location.

Task-2

Assist DFG in the construction of screen facility. Provide surveying and engineering service as needed. Provide heavy equipment and operator for screen excavation and diversion ditch capacity modifications. Contract to bring electrical power to screen site.

Task-3

Perform final design of siphon and dam removal. Prepare plans and

specification for bidding.

Task-4

Prepare environmental documentation and obtain permits. With assistance from DFG prepare CEQA and NEPA documents (if needed) and obtain permits for construction of siphon and dam removal.

Task-5

Construct siphon facility and remove dam. Put contract out to bid, award bid, manage contract, provide inspection, and pay contractor.

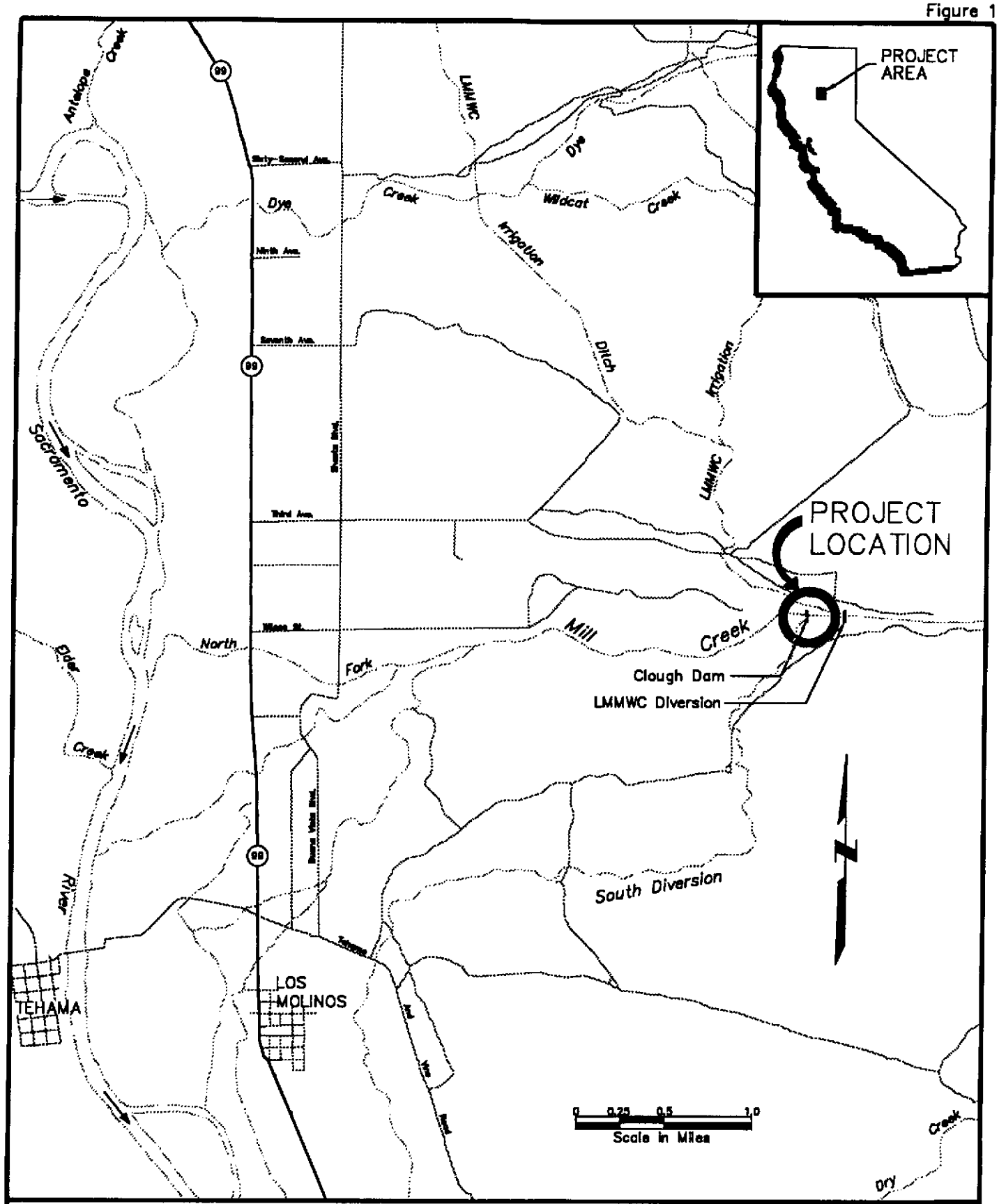
LOCATION OF PROJECT

The study area is on Mill Creek (USGS Quad Los Molinos) near Los Molinos, California. Figure 1 shows the location of the project area.

EXPECTED BENEFITS

This project will provide a water delivery system that will eliminate the Clough Dam on Mill Creek. A water diversion dam at this site has the potential to completely block upstream migration of salmon and steelhead, including the spring-run chinook. Mill Creek is one of the few remaining Sacramento River tributaries that maintains a spring run of these fish. Even with a fishway on the dam, there is migration delays and injury to the fish that are associated with any structure of this nature on the channel. This project will combine two irrigation diversions into one canal. This will eliminate the costly operation and maintenance of an additional fish screen as well as a fishway on the dam. This is an opportunity to not only conserve maintenance funds, which can be shifted to other worthwhile projects, but it will also significantly improve fish passage.

Figure 1



Location Map for Clough Siphon on Mill Creek Near Los Molinos, Ca.

State of California
The Resources Agency
Department of Water Resources
Northern District

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I-008225

BACKGROUND AND TECHNICAL JUSTIFICATION

Two fishery restoration plans, the California Department of Fish and Game's Restoring Central Valley Streams: A Plan for Action, November 1993, and the U.S. Fish and Wildlife Service's Revised Draft Anadromous Fish Restoration Plan, May 30, 1997, have identified fish passage on Mill Creek as a high priority for fish passage modification. The recent petition presented to the California Fish and Game Commission to list the spring-run chinook under the California Endangered Species Act has amplified the need for action at this site.

Recent experience has demonstrated that projects of this magnitude require relatively detailed site characterization and engineering to develop the most effective and cost efficient remedies. In addition, the complexities of environmental review and permitting, including issues of access, need assessment to develop accurate cost estimates and construction schedules.

This proposal will provide site characterization, engineering designs, construction, and inspection to modify the Clough Dam diversion. The modification includes a new fish screen in the north side diversion, a siphon from the north side to the south side diversion ditch, and removal of the remaining portion of Clough Dam.

There are three diversion dams on Mill Creek. Heading upstream from the mouth of Mill Creek the first dam is the Ward Dam. The Red Bluff DFG screen shop has just completed modifying the Ward Dam in the summer of 1997. The downstream face of the dam was sloped and a new low head fish ladder was constructed. The middle dam on Mill Creek is called Clough Dam. It was scheduled for a new ladder, but the north end of the dam washed out in December-January 1996-97. If this proposed project is not built, it is the plan of the diverters to repair the existing dam. The diverter put in a temporary diversion during the 1997 irrigation season and DWR is under contract with DFG to install a temporary system for the 1998 and 1999 irrigation seasons. Clough Dam is about 1/2 mile downstream of the Upper Dam. The Upper Dam diverts 70 cfs to the north and Clough Dam diverts 22 cfs to the south. The original Clough Dam construction started in 1913 and was completed in 1914 (referenced from memo dated July 6, 1943 from George P. Miller to J. Spencer). Through the years, it was repaired and added to several times due to flood damage and the need to improve fish passage. Remnants of an old ditch and supports for a flume attest to earlier attempts to bring water from the upper dam to the Clough diversion.

MONITORING AND DATA EVALUATION

After completion of this project DFG will be responsible for monitoring the performance of the project components. DFG will assume the responsibility of operating and maintaining the fish screen. The LMMWC will assume the responsibility of operating and maintaining the siphon system.

IMPLEMENTABILITY

DFG has letters from Clough Dam diversion users and the landowners stating their willingness to cooperate in the project. Assuming permits and environmental compliance can be met, funding is available, and the weather does not cause delays, there should be no problem in completing this project.

COSTS AND SCHEDULE

BUDGET COSTS

The budget cost for this proposal is $1,280,000. Below is a summary table breaking down this cost into task costs and categories. All equipment, supplies, materials, and vehicles necessary to conduct this investigation will be provided by DWR.

NOTE: DFG has contracted with DWR to perform preliminary investigation of the screen and siphon. Work includes topographic mapping, developing initial design concepts, some site exploration, and environmental. The funding source for the preliminary investigation is Tracy Pump Mitigation.

COST BREAKDOWN TABLE

Project Phase and Task	Labor Hours	Direct Salary and Benefits	Overhead Labor (General, Admin. and Fee)	Construction Contracts	DWR Equipment	Total Cost
Task 1 Design Fish Screen Facility	163	$ 12,511	$ 8,764			$ 21,275
Task 2 Fish Screen Construction Construction Oversight	142	$ 10,899	$ 7,601	$ 26,875	$ 65,625	$ 92,500 $ 18,500
Task 3 Design Inverted Siphon	1,230	$ 94,409	$ 66,116			$ 160,525
Task 4 Environmental Documentation	185	$ 14,165	$ 9,910			$ 24,075
Task 5 Inverted Siphon Construction Construction Oversight	1,230	$ 94,409	$ 66,116	$ 802,600		$ 802,600 $ 160,525
Totals	2,950	$ 226,393	$ 158,507	$ 829,475	$ 65,625	$ 1,280,000

SCHEDULE MILESTONES

The following table lists anticipated completion dates for the task. These are provided based upon the assumption that funding is provided by October 1998, permits can be obtained and that weather does not cause delay.

Task Number	Task	Completion Date
1	screen design	November 1, 1998
2	screen construction	April 15, 1999
3	siphon and dam removal design	April 1, 1999
4	permits & environmental documentation for siphon and dam removal	April 1, 1999
5	construction of siphon and dam removal	December 1, 1999

THIRD PARTY IMPACTS

No negative third party impacts are foreseen from the scope of this Proposal.

APPLICANT QUALIFICATIONS

This project will be conducted by staff of the Northern District (ND) DWR in collaboration with staff from DFG, FWS, National Marine Fisheries Service (NMFS), and landowners/diverters. The ND may also utilize other divisions of the Department (ie: Division of Engineering, Office of Environmental Services, Oroville Field Divisions, etc.) The scope of this proposal was put together with the consensus of DWR, DFG, LMMWC, and Clough Dam diverters. Collaborators will provide input through periodic stakeholders meetings and the design review process. DFG will provide specific guidance and input for biological perameters related to design concepts. DFG and FWS will approve the final designs. Environmental compliance for this project will likewise be carried out with collaboration between DWR and DFG.

This project will be directed by Mr. William Mendenhall, Chief of the Engineering Studies Section of the Northern District DWR. Mr. Curtis Anderson and Mr. William McLaughlin will be the lead engineers for the designs. They will be assisted by other staff engineers, surveyors, technicians, and office support staff as necessary to complete the project.

William Mendenhall

Mr. Mendenhall earned his B.S. degree in Civil Engineering from California State University, Chico in 1980. He is a registered California Professional Engineer in the Civil Branch. He has been directly involved with fishery restoration work since 1975. He is currently a member of the Trinity River Technical Coordinating Committee. Mr. Mendenhall has been Chief of the Engineering Studies Section since 1990. Under his lead or direction, DWR has provided engineering support for: Trinity River Sediment Removal, 1980; Trinity River Habitat Restoration Projects, including numerous streambed stabilization, gravel replacement, spawning channel, and rearing habitat projects; Klamath and Shasta River spawning channels, 1980; Lewiston Temperature Control Curtain Investigation, 1983; Clear Creek Instream Flow Needs Study, 1984; Upper Sacramento River Instream Flow Needs Study, 1985; Santa Ynez Instream Flow Needs Study, 1989; Feather River Instream Flow Needs Study, 1989; Scott River Flow Augmentation Study, 1990; Mill Creek Water Transfer Investigation, 1991; Deer Creek Water Transfer Investigation, 1991; several Butte Creek fish ladder and fish screen designs for DFG, 1994; Battle Creek - Eagle Canyon Diversion Fish Ladder and Fish Screen Design, 1997; Battle Creek – five screen and ladder projects, current; Clear Creek - Saeltzer Dam Fish Ladder Design, current. William has also received training in numerous hydraulic design and habitat modeling courses including Fish Passageways and Diversion Structures, HEC-2, and HEC-6. References include Paul Ward, DFG, 2440 Main Street, Red Bluff, CA; Phil Warner, DFG, 601 Locust Street, Redding, CA; and Patricia Parker, FWS, 10950 Tyler Road, Red Bluff, CA.

Curtis Anderson

Mr. Anderson earned his B.S. degree in Civil Engineering from California State University, Chico in 1990. He is a registered California Professional Engineer in the Civil Branch. He has been directly involved with fishery restoration work since 1991. Mr. Anderson has provided engineering support with increasing levels of responsibility for: Greenhorn Creek Restorations and Stabilization, 1992; Feather River Instream Flow Study, 1991-92; Wolf Creek Restoration and Stabilization, 1993; Site surveying for Gorril Dam on Butte Creek, 1994; Mill Creek Clough Dam fish screen and dam removal, Current. Curtis has also received training in numerous hydraulic designs, habitat modeling, and fish structure design courses including Fish Passageways and Diversion Structures and HEC-2.

William McLaughlin

Mr. McLaughlin earned his B.S. degree in Civil Engineering from California State University, Chico in 1995. He has been directly involved with fishery restoration work since 1997. He has provided engineering support for: Trinity River Habitat Restoration Projects, Battle Creek - Eagle Canyon Diversion Fish Ladder and Fish Screen Design, Clear Creek - Saeltzer Dam Fish Ladder Design, Mill Creek – Clough Dam Siphon and Screen Project, current. William has received training in a hydraulic design and fish structure design course courses including Fish Passageways and Diversion Structures.

Gerald Boles

Mr. Boles has a B.A. degree in Microbiology (minor in Chemistry) and a M.A. degree in Biological Sciences. In addition to years of experience with budgets and general supervisory functions, he has supervised and conducted numerous water quality investigations. His duties have required him to develop and implement studies and research projects to determine environmental effects on water quality, wildlife, plants, and fisheries. Some projects for which he has been directly responsible include; assessment of impacts to the aquatic macroinvertebrate community following the metam sodium chemical spill in the upper Sacramento River, 1991; development and implementation of a water quality assessment program at Lake Almanor in cooperation with Plumas County; long-term water quality monitoring at both Clear and Eagle Lakes; evaluation of effects to aquatic resources from cloudseeding in the upper Feather River area; groundwater quality assessments in the Sacramento Valley, Eagle Lake, and Cady Springs areas; and assessment of factors affecting the water quality of a drinking water supply reservoir. References include Steve Turek, DFG, 2440 Athens Avenue, Redding, CA; Lauri Zander, Lahontan Regional Water Quality Control Board, 2501 Lake Tahoe Boulevard, South Lake Tahoe, CA; and Laura Barnthouse, Plumas County Environmental Health Department, P.O. Box 545, Chester, CA.

COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

As a public agency, all standard terms and conditions will be approved at signing of the contract. No forms are necessary for submission with this proposal .